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AUTHOR: (3) Aksel'rod, S.B.

TITLE: (4) Approximate formula for evaluating the magnitude of the jet influence on the damper of the control mechanism type "nozzle-damper"

SOURCE: (5) Tsentral'nyy nauchno-issledovatel'skiy institut morskogo flota. Trudy. no. 38, 1961. Tekhnicheskaya ekspluatatsiya sudovykh silovykh ustanovok

TITLE: The author develops the approximate formula for determining the power characteristics of the control mechanism when the regulating system uses an incompressible fluid as working substance. All previous investigations on this subject assumed a flow toward the damper, the incompressible fluids used being air, kerosene and АМГ10 (AMG10) oil. However, for a large number of marine gasturbine installations it is necessary to know the damper characteristics when the flow is directed away from the damper (Fig. 1). The fluid used for this particular investigation was diesel oil. The author finds the final formula (8) for the case of flow as shown in Fig. 1:

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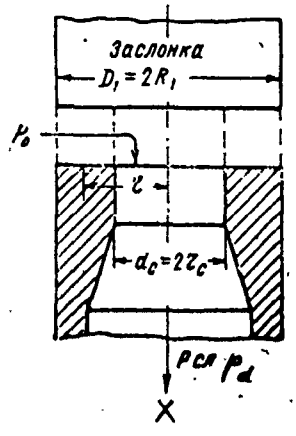
Approximate formula for evaluating the ....

$$N = \pi p_d r_c^2 + \pi p_0 (R_1^2 - r_c^2) - \frac{B^2 \rho}{\pi} \left(\frac{\zeta}{4h^2} \ln \frac{R_1}{r_c} - \frac{1}{r_c^2} \right) \quad (8)$$

where N is the jet pressure, p_d the discharge pressure, p_0 the static pressure, ρ the density of the liquid, B the flow volume per second, ζ the coefficient of loss. There are 3 figures.

Figure 1



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